wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table; and

wherein in the first interleaver stage, a birefringent element of orientation φ_1 has phase delay $\Gamma+2m_1\pi$ or $\Gamma+(2m_1+1)\pi$, a birefringent element of orientation φ_2 has phase delay $2\Gamma+2m_2\pi$, and wherein the birefringent elements are arranged in the order listed in the table; and

wherein in the second interleaver stage, a birefringent element of orientation $\pm\varphi_1$ or $90° \pm\varphi_1$ has phase delay $\Gamma+2k_1\pi$ or $\Gamma+(2k_1+1)\pi$, a birefringent element of orientation $\pm\varphi_2$ or $90° \pm\varphi_2$ has phase delay $2\Gamma+2k_2\pi$, and wherein the birefringent elements are arranged in the order listed in the table.

REMARKS

This is a response to the Office Action mailed December 12, 2002. Original claims 1, 2, and 5 have been canceled from the application, original claims 3 and 4 have been amended, and new claims 6 and 7 have been added. Claims 3, 4, 6, and 7 are therefore presently in the application.

In the Office Action, the Examiner objected to the drawings under 37 CRF 1.83(a), stating that the second interleaver and its arrangement with respect to polarizer 12 must be shown or the feature(s) canceled from the claims(s).

However, Applicant respectfully submits that an interleaver is shown generally in Figure 1 and that this showing applies to both the first interleaver and the second interleaver. No particular arrangement of the second interleaver with respect to polarizer 12 (other than phase delays and angular orientations, which do not lend themselves to drawings and which are adequately described in the specification and claims) is claimed. Therefore, Applicant believes that the drawings are in compliance with 37 CFR 1.83(a).

In the Office Action, the Examiner stated that claims 3 and 4 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, second paragraph, and include all of the limitations of the base claim and any intervening claims. Claims 3 and 4 have been rewritten accordingly.

More particularly, the Examiner stated that Claims 3 and 4 are ambiguous as to whether the assembly comprises two single stage interleavers, one single stage and one double stage interleaver, or two double stage interleavers. Applicant has amended Claims 3 and 4 to recite "A low dispersion interleaver assembly comprising: a first interleaver stage having three birefringent elements; a second

interleaver stage having three birefringent elements." Applicant respectfully submits that this amendment makes it clear that two interleaver stages are used and each stage contains three birefringent elements.

Additionally, the Examiner stated that in Claims 3 and 4, it is not clear that each of the recited angles corresponds in order to each of the recited first stage phase delays. Applicant has amended Claims 3 and 4 to recite "wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table." Applicant respectfully submits that this amendment makes it clear that for each stage, the recited angles correspond to each of the recited phase delays in the order listed in the table.

Additionally, the Examiner stated that since not all of the angular orientations are stated in ascending order, it is not clear in what order the phase delays are to be arranged. Applicant has further amended Claim 3 to recite "wherein a birefringent element of orientation $\pm\varphi_1$ or $90° \pm\varphi_1$ has phase delay Γ, wherein a birefringent element of orientation $\pm\varphi_2$ or $90° \pm\varphi_2$ has phase delay 2Γ, wherein a birefringent element of orientation $\pm\varphi_3$ or $90° \pm\varphi_3$ has phase delay 2Γ, and wherein the birefringent elements are arranged in the order listed in the table."

Applicant has elected to use the convention that φ_1 corresponds to that birefringent element which has a phase delay of Γ by definition and that φ_2 and φ_3 correspond to those birefringement elements which have phase delays of 2Γ by definition. Thus, in the table (where the birefringent elements are listed in the order in which they are physically arranged), they will not always be listed in ascending order.

Applicant has further amended Claim 4 to recite "wherein in the first interleaver stage, a birefringent element of orientation φ_1 has phase delay $\Gamma+2m_1\pi$ or $\Gamma+(2m_1+1)\pi$, a birefringent element of orientation φ_2 has phase delay $2\Gamma+2m_2\pi$, and a birefringent element of orientation φ_3 has phase delay $2\Gamma+2m_3\pi$, and wherein the birefringent elements are arranged in the order listed in the table; and

wherein in the second interleaver stage, a birefringent element of orientation $\pm\varphi_1$ or $90° \pm\varphi_1$ has phase delay $\Gamma+2k_1\pi$ or $\Gamma+(2k_1+1)\pi$, a birefringent element of orientation $\pm\varphi_2$ or $90° \pm\varphi_2$ has phase delay $2\Gamma+2k_2\pi$, a birefringent element of orientation $\pm\varphi_3$ or $90° \pm\varphi_3$ has phase delay $2\Gamma+2k_3\pi$, and wherein the birefringent elements are arranged in the order listed in the table."

Additionally, the Examiner stated that since there is no positive recitation of each of the stages as comprising three elements, it is not clear how many times each of the recited values may be used. Applicant has amended Claims 3 and 4 to positively recite "a first interleaver stage having three birefringent elements; a second interleaver stage having three birefringent elements."

Additionally, the Examiner stated that since there is no clear designation of designs along the ordinate, it is not clear whether a value for each column may, at the same time, be selected from any row. Applicant has amended Claims 3 and 4 to recited that the selections are made "from a single row of the table."

New claim 6 is substantially similar to claim 3, except that new claim 6 explicitly recites the use of interleaver stages of two birefringent elements instead of interleaver stages of three birefringent elements. Discussion on use of interleaver stages of two birefringent elements can be found in paragraph [0102] in the specification. In claim 6, the two element table is obtained from the three element table in claim 3 by ignoring the third birefringent element of orientation $\pm\varphi_3$ or $90° \pm\varphi_3$, as indicated in paragraph [0102]. Applicant respectfully submits that no new matter has been added. Applicant believes that new claim 6 is allowable for the same reasons that amended claim 3 is allowable.

New claim 7 is substantially similar to claim 4, except that new claim 7 explicitly recites the use of interleaver stages of two birefringent elements instead of interleaver stages of three birefringent elements. Discussion on use of interleaver stages of two birefringent elements can be found in paragraph [0102] in the specification. In claim 7, the two element table is obtained from the three element table in claim 4 by ignoring the third birefringent element of orientation $\pm\varphi_3$ or $90° \pm\varphi_3$, as indicated in paragraph [0102]. Applicant respectfully submits that no new matter has been added. Applicant believes that new claim 7 is allowable for the same reasons that amended claim 4 is allowable.

The double patenting rejections are not being addressed at this time, since these rejections are provisional.

It is respectfully submitted that all of the claims are in condition for immediate allowance. Reconsideration and an early allowance is therefore respectfully requested.

Please note that applicant's representative has a new address. Please address all correspondence to Myers, Dawes & Andras LLP, Attention: Norman Carte, 19900 MacArthur Blvd., Ste. 1150, Irvine, CA 92612. A Revocation of Power of Attorney and Substitute Power of Attorney are enclosed herewith.

Respectfully submitted,
Myers, Dawes & Andres LLP

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VERSION WITH MARKINGS TO SHOW CHANGES

In the Claims:

Claims 1, 2, and 5 have been canceled.

Claim 3 and 4 have been amended as follows:

3. (amended) A low dispersion interleaver assembly comprising:

a first interleaver stage having three birefringent elements;

a second interleaver stage having three birefringent elements;

wherein the angular orientations and phase delays of the birefringent elements in the first interleaver stage and the second interleaver stage are configured so as to cooperate to provide a dispersion vs. wavelength curve wherein the dispersion value for the first interleaver stage is approximately opposite in value to a dispersion value at the same wavelength for the second interleaver, so as to mitigate dispersion in the interleaver assembly;

[The low dispersion interleaver assembly as recited in claim 1,] wherein the angular orientations and the phase delays of the birefringent elements are selected from [the groups listed in] a single row of the table:

Table I

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma, 2\Gamma, 2\Gamma$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma, 2\Gamma, 2\Gamma$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (orthogonal component)
$2\Gamma, 2\Gamma, \Gamma$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma, 2\Gamma, \Gamma$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$\Gamma, 2\Gamma, 2\Gamma$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma, 2\Gamma, \Gamma$	$90°\pm\varphi_3, 90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma, 2\Gamma, \Gamma$	$\varphi_3, \varphi_2, \varphi_1$	$\Gamma, 2\Gamma, 2\Gamma$	$90°\pm\varphi_1, 90°\pm\varphi_2, 90°\pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)

wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table; and

wherein a birefringent element of orientation $\pm\varphi_1$ or $90° \pm \varphi_1$ has phase delay Γ, wherein a birefringent element of orientation $\pm\varphi_2$ or $90° \pm \varphi_2$ has phase delay 2Γ, wherein a birefringent element of orientation $\pm\varphi_3$ or $90° \pm \varphi_3$ has phase delay 2Γ, and wherein the birefringent elements are arranged in the order listed in the table.

4. (amended) A low dispersion interleaver assembly comprising:

a first interleaver stage having three birefringent elements;

a second interleaver stage having three birefringent elements;

wherein the angular orientations and phase delays of the birefringent elements in the first interleaver stage and the second interleaver stage are configured so as to cooperate to provide a dispersion vs. wavelength curve wherein the dispersion value for the first interleaver stage is approximately opposite in value to a dispersion value at the same wavelength for the second interleaver, so as to mitigate dispersion in the interleaver assembly;

[The low dispersion interleaver assembly as recited in claim 1,] wherein the angular orientations and the phase delays of the birefringent elements are selected from [the groups listed in] a single row of the table:

Table II

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90° \pm \varphi_1, 90° \pm \varphi_2, 90° \pm \varphi_3$ (parallel component) $90° \pm \varphi_1, 90° \pm \varphi_2, 90° \pm \varphi_3$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90° \pm \varphi_3, 90° \pm \varphi_2, 90° \pm \varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (parallel component) $\pm\varphi_1, \pm\varphi_2, \pm\varphi_3$ (orthogonal component)
$\Gamma + 2m_1\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	$\varphi_1, \varphi_2, \varphi_3$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90° \pm \varphi_3, 90° \pm \varphi_2, 90° \pm \varphi_1$ (parallel component) $\pm\varphi_3, \pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	$\varphi_3, \varphi_2, \varphi_1$	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90° \pm \varphi_3, 90° \pm \varphi_2, 90° \pm \varphi_1$ (parallel component) $90° \pm \varphi_3, 90° \pm \varphi_2, 90° \pm \varphi_1$ (orthogonal component)

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	φ_3, φ_2, φ_1	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (parallel component) $\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	φ_3, φ_2, φ_1	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (parallel component) $90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + 2m_1\,\pi$	φ_3, φ_2, φ_1	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (parallel component) $90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	φ_1, φ_2, φ_3	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (parallel component) $\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	φ_1, φ_2, φ_3	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (parallel component) $\pm\varphi_3$, $\pm\varphi_2$, $\pm\varphi_1$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	φ_1, φ_2, φ_3	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (parallel component) $90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (orthogonal component)
$\Gamma + (2m_1 + 1)\,\pi$, $2\Gamma + 2m_2\,\pi$, $2\Gamma + 2m_3\,\pi$	φ_1, φ_2, φ_3	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (parallel component) $\pm\varphi_3$, $\pm\varphi_2$, $\pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + (2m_1 + 1)\,\pi$	φ_3, φ_2, φ_1	$\Gamma + 2k_1\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (parallel component) $90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + (2m_1 + 1)\,\pi$	φ_3, φ_2, φ_1	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + 2k_1\,\pi$	$90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (parallel component) $90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + (2m_1 + 1)\,\pi$	φ_3, φ_2, φ_1	$\Gamma + (2k_1 + 1)\,\pi$, $2\Gamma + 2k_2\,\pi$, $2\Gamma + 2k_3\,\pi$	$90° \pm \varphi_1$, $90° \pm \varphi_2$, $90° \pm \varphi_3$ (parallel component) $\pm\varphi_1$, $\pm\varphi_2$, $\pm\varphi_3$ (orthogonal component)
$2\Gamma + 2m_3\,\pi$, $2\Gamma + 2m_2\,\pi$, $\Gamma + (2m_1 + 1)\,\pi$	φ_3, φ_2, φ_1	$2\Gamma + 2k_3\,\pi$, $2\Gamma + 2k_2\,\pi$, $\Gamma + (2k_1 + 1)\,\pi$	$90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (parallel component) $90° \pm \varphi_3$, $90° \pm \varphi_2$, $90° \pm \varphi_1$ (orthogonal component)

wherein m_1, m_2, m_3, k_1, k_2, k_3 are integers $(0, \pm1, \pm2, \ldots)[.]$; and

wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table; and

wherein in the first interleaver stage, a birefringent element of orientation φ_1 has phase delay $\Gamma+2m_1\pi$ or $\Gamma+(2m_1+1)\pi$, a birefringent element of orientation φ_2 has phase delay $2\Gamma+2m_2\pi$, and a birefringent element of orientation φ_3 has phase delay $2\Gamma+2m_3\pi$, and wherein the birefringent elements are arranged in the order listed in the table; and

wherein in the second interleaver stage, a birefringent element of orientation $\pm\varphi_1$ or $90° \pm\varphi_1$ has phase delay $\Gamma+2k_1\pi$ or $\Gamma+(2k_1+1)\pi$, a birefringent element of orientation $\pm\varphi_2$ or $90° \pm\varphi_2$ has phase delay $2\Gamma+2k_2\pi$, a birefringent element of orientation $\pm\varphi_3$ or $90° \pm\varphi_3$ has phase delay $2\Gamma+2k_3\pi$, and wherein the birefringent elements are arranged in the order listed in the table.

New claims 6 and 7 have been added, as follows:

6. (new) A low dispersion interleaver assembly comprising:

a first interleaver stage having two birefringent elements;

a second interleaver stage having two birefringent elements;

wherein the angular orientations and phase delays of the birefringent elements in the first interleaver stage and the second interleaver stage are configured so as to cooperate to provide a dispersion vs. wavelength curve wherein the dispersion value for the first interleaver stage is approximately opposite in value to a dispersion value at the same wavelength for the second interleaver, so as to mitigate dispersion in the interleaver assembly;

wherein the angular orientations and the phase delays of the birefringent elements are selected from a single row of the table:

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
Γ, 2Γ	φ_1, φ_2	Γ, 2Γ	$90°\pm\varphi_1$, $90°\pm\varphi_2$ (parallel component) $90°\pm\varphi_1$, $90°\pm\varphi_2$ (orthogonal component)
2Γ, Γ	φ_2, φ_1	2Γ, Γ	$90°\pm\varphi_2$, $90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_2$, $90°\pm\varphi_1$ (orthogonal component)
Γ, 2Γ	φ_1, φ_2	2Γ, Γ	$90°\pm\varphi_2$, $90°\pm\varphi_1$ (parallel component) $\pm\varphi_2$, $\pm\varphi_1$ (orthogonal component)
2Γ, Γ	φ_2, φ_1	Γ, 2Γ	$90°\pm\varphi_1$, $90°\pm\varphi_2$ (parallel component) $\pm\varphi_1$, $\pm\varphi_2$ (orthogonal component)

wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table; and

wherein a birefringent element of orientation $\pm\varphi_1$ or $90° \pm\varphi_1$ has phase delay Γ, wherein a birefringent element of orientation $\pm\varphi_2$ or $90° \pm\varphi_2$ has phase delay 2Γ, and wherein the birefringent elements are arranged in the order listed in the table.

7. (new) A low dispersion interleaver assembly comprising:

a first interleaver stage having two birefringent elements;

a second interleaver stage having two birefringent elements;

wherein the angular orientations and phase delays of the birefringent elements in the first interleaver stage and the second interleaver stage are configured so as to cooperate to provide a dispersion vs. wavelength curve wherein the dispersion value for the first interleaver stage is approximately opposite in value to a dispersion value at the same wavelength for the second interleaver, so as to mitigate dispersion in the interleaver assembly;

wherein the angular orientations and the phase delays of the birefringent elements are selected from a single row of the table:

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$	φ_1, φ_2	$\Gamma + 2k_1\pi$, $2\Gamma + 2k_2\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2$ (orthogonal component)
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$	φ_1, φ_2	$2\Gamma + 2k_2\pi$, $\Gamma + 2k_1\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$	φ_1, φ_2	$\Gamma + (2k_1+1)\pi$, $2\Gamma + 2k_2\pi$	$\pm\varphi_1, \pm\varphi_2$ (parallel component) $\pm\varphi_1, \pm\varphi_2$ (orthogonal component)
$\Gamma + 2m_1\pi$, $2\Gamma + 2m_2\pi$	φ_1, φ_2	$2\Gamma + 2k_2\pi$, $\Gamma + (2k_1+1)\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	φ_2, φ_1	$2\Gamma + 2k_2\pi$, $\Gamma + 2k_1\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	φ_2, φ_1	$\Gamma + 2k_1\pi$, $2\Gamma + 2k_2\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2$ (parallel component) $\pm\varphi_1, \pm\varphi_2$ (orthogonal component)
$2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	φ_2, φ_1	$\Gamma + (2k_1+1)\pi$, $2\Gamma + 2k_2\pi$	$\pm\varphi_1, \pm\varphi_2$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2$ (orthogonal component)
$2\Gamma + 2m_2\pi$, $\Gamma + 2m_1\pi$	φ_2, φ_1	$2\Gamma + 2k_2\pi$, $\Gamma + (2k_1+1)\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)

First Stage Phase Delays	First Stage Orientations	Second Stage Phase Delays	Second Stage Orientations
$\Gamma+(2m_1+1)\pi$, $2\Gamma+2m_2\pi$	φ_1, φ_2	$\Gamma+2k_1\pi$, $2\Gamma+2k_2\pi$	$\pm\varphi_1, \pm\varphi_2$ (parallel component) $\pm\varphi_1, \pm\varphi_2$ (orthogonal component)
$\Gamma+(2m_1+1)\pi$, $2\Gamma+2m_2\pi$	φ_1, φ_2	$2\Gamma+2k_2\pi$, $\Gamma+2k_1\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$\Gamma+(2m_1+1)\pi$, $2\Gamma+2m_2\pi$	φ_1, φ_2	$\Gamma+(2k_1+1)\pi$, $2\Gamma+2k_2\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2$ (orthogonal component)
$\Gamma+(2m_1+1)\pi$, $2\Gamma+2m_2\pi$	φ_1, φ_2	$2\Gamma+2k_2\pi$, $\Gamma+(2k_1+1)\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $\pm\varphi_2, \pm\varphi_1$ (orthogonal component)
$2\Gamma+2m_2\pi$, $\Gamma+(2m_1+1)\pi$	φ_2, φ_1	$\Gamma+2k_1\pi$, $2\Gamma+2k_2\pi$	$\pm\varphi_1, \pm\varphi_2$ (parallel component) $90°\pm\varphi_1, 90°\pm\varphi_2$ (orthogonal component)
$2\Gamma+2m_2\pi$, $\Gamma+(2m_1+1)\pi$	φ_2, φ_1	$2\Gamma+2k_2\pi$, $\Gamma+2k_1\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)
$2\Gamma+2m_2\pi$, $\Gamma+(2m_1+1)\pi$	φ_2, φ_1	$\Gamma+(2k_1+1)\pi$, $2\Gamma+2k_2\pi$	$90°\pm\varphi_1, 90°\pm\varphi_2$ (parallel component) $\pm\varphi_1, \pm\varphi_2$ (orthogonal component)
$2\Gamma+2m_2\pi$, $\Gamma+(2m_1+1)\pi$	φ_2, φ_1	$2\Gamma+2k_2\pi$, $\Gamma+(2k_1+1)\pi$	$90°\pm\varphi_2, 90°\pm\varphi_1$ (parallel component) $90°\pm\varphi_2, 90°\pm\varphi_1$ (orthogonal component)

wherein m_1, m_2, m_3, k_1, k_2, k_3 are integers (0, ±1, ±2, . . .); and

wherein the orientations of the birefringent elements of each stage correspond to the phase delays of the birefringent elements of the same stage in the order listed in the table; and

wherein in the first interleaver stage, a birefringent element of orientation φ_1 has phase delay $\Gamma+2m_1\pi$ or $\Gamma+(2m_1+1)\pi$, a birefringent element of orientation φ_2 has phase delay $2\Gamma+2m_2\pi$, and wherein the birefringent elements are arranged in the order listed in the table; and

wherein in the second interleaver stage, a birefringent element of orientation $\pm\varphi_1$ or $90°\pm\varphi_1$ has phase delay $\Gamma+2k_1\pi$ or $\Gamma+(2k_1+1)\pi$, a birefringent element of orientation $\pm\varphi_2$ or $90°\pm\varphi_2$ has phase delay $2\Gamma+2k_2\pi$, and wherein the birefringent elements are arranged in the order listed in the table.